

This inquiry asks why cancer outcomes in England continue to lag behind comparable countries internationally and examine evidence relating to the underlying causes of these differences.

It also considers what impact disruption to cancer services during the covid-19 pandemic will have on efforts to catch up, and ask whether the ambitions set out in the NHS Long Term Plan will help close the gap with the best performing countries worldwide.

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A. Introduction and policy overview

1. Based on the latest data available up to 2017, one-year survival rates for all cancers combined are at a record high in the UK. Between 2003 and 2018, the one-year survival for all cancers combined increased from 63.6% to 73.9%. Between 2003 and 2014, the five-year survival for all cancer combined increased from 45.7% to 54.6%¹
2. The Government is committed to improving cancer survival and outcomes. To support this, NHS Long Term Plan (January 2019) has set out ambitions that, by 2028:
 - the proportion of cancers diagnosed at stages 1 and 2 will rise from around 54% now to 75% of cancer patients; and
 - 55,000 more people each year will survive their cancer for at least five years after diagnosis.
3. The NHS Long Term Plan sets out a series of commitments to support this ambition. It focuses primarily on fast and early diagnosis: raising greater awareness of symptoms of cancer, lowering the threshold for referral by GPs, accelerating access to diagnosis and treatment and maximise the number of cancers that we identify through screening.
4. This builds on earlier national cancer plans – see Table 1 in Annex A. Cancer has been a priority for successive governments since the first national guidance was published in 1995.
5. Throughout the Covid-19 pandemic, cancer services continued to be a priority for the NHS. Thanks to the huge effort of the people working in the NHS, 95% of people started treatment within a month of diagnosis. Between March 2020 and June 2021, there were 2.91 million urgent referrals and over 715,000 people received cancer treatment.
6. Nonetheless, NHSEI estimate that up to 36,000 fewer people than expected started cancer treatment during this period, and delays in treatment for some patients means there is a backlog to recover. It is too early to know what the impact has been on mortality and on longer term outcomes such as the early diagnosis ambition.

¹ Years quoted are years of diagnosis. Source: ONS

B. Data and International Comparisons for Cancer Outcomes

7. The CONCORD² study considered a wide range of cancers for 71 countries, including 31 from Europe. This study was used to design the Long Term Plan survival ambition, to match the best survival rates in Europe. The Concord study covers a wider range of cancers (18 in total) and countries for the same period than the International Cancer Benchmarking Partnership (ICBP).
8. Cancer survival in the UK has historically lagged behind the best performing countries in Europe and the world. The CONCORD data confirms survival in the UK being comparatively low in the cancers covered in ICBP, but also reveals a more differentiated picture.
9. The CONCORD data shows a differentiated picture across different tumour sites. For example, comparing performance across the European countries in 2010-14, UK survival is in the top third for:
 - Acute lymphoma in childhood (4th out of 28 countries with data for this cancer)
 - Melanoma (7th / 28)
10. UK survival in the top 10 for:
 - Rectum (10th / 28)
 - Oesophagus (10th / 27)
11. However, UK survival is in the bottom third for:
 - Adult brain cancer (20th / 27)
 - Ovary (22nd / 28)
 - Pancreas (20th / 27)
 - Lung (21st / 28)
 - Stomach (24th / 28)
12. Annex B sets out further analysis of the CONCORD data. It shows that the UK has been making significant improvements in reducing this gap.
13. When looking at how the UK compares with Australia, Canada, France, Germany, New Zealand, and USA as an illustrative selection of high-performing, similarly developed countries, we can see that:
 - In 2000-04, the UK had the lowest five-year net survival rate among these countries for ten of the 18 cancer “types”, which reduced to nine of those cancers in 2010-14
 - The UK had the highest improvement over the study period (in terms of percentage point survival increase) for ten of the 18 cancer “types”; and our improvement was at least 3 percentage points for each of the 18 “types”
 - The UK improved its ranking for six of the 18 cancer “types”, and
 - The UK’s ranking for survival with acute lymphoblastic leukaemia among children went from 6th in 2000-04 to 2nd
14. Some caution is needed in relying on these international comparisons to measure the current performance of the system. The time lag in getting the data means, for example,

² *Global surveillance of trends in cancer survival 2000–14 (CONCORD-3): analysis of individual records for 37 513 025 patients diagnosed with one of 18 cancers from 322 population-based registries in 71 countries*, available at [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)33326-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)33326-3/fulltext)

that the latest results do not reflect recent advances in the last six to seven years – and so, for example, predates action being taken under the Long Term Plan. In terms of data collection, there are different regional practices and variation in data completeness, e.g. often regional rather than national data is compared. Nonetheless, the results can be useful as a long-term benchmark.

C. Progress along the cancer pathway

15. This section sets out how different areas of the cancer pathway, that relate directly to patient experience and care, are moving forward to improve cancer outcomes. Through this section we will look at how implementing the NHS Long Term Plan will improve early diagnosis (including screening), treatment, and quality of life and patient experience of care and therefore cancer outcomes.

Early diagnosis

16. In 2019, the NHS Long Term Plan for the first time set a challenging ambition to increase the number of cancers diagnosed at Stage 1 and 2 from around 55% now to 75% by 2028. Many of the Long Term Plan commitments focus on activities to increase early diagnosis (and therefore survival rates).
17. This ambition was intentionally set at a stretching level. Achieving it requires material progress in all the Long Term Plan activities, as well as successful innovation. The Covid-19 pandemic has made this ambition even more difficult because of the additional pressure put on it as the NHS as they seek to recover from the pandemic. It is likely that progress in reaching the early diagnosis 2028 ambition will be impacted by the Covid-19 pandemic, but it is too early to assess the extent of that.
18. Progress continues towards achieving that ambition across a number of areas. Maximising the number of cancers identified through screening and modernising our cancer screening programmes is a vital part of improving cancer outcomes, by detecting cancer at an earlier, more treatable stage. This focuses on improving uptake and accuracy.
19. England has national cancer screening programmes for bowel, breast and cervical cancer with robust quality assurance processes and data links with cancer registries. They are some of the largest, most rigorous of their kind in the world and prevent thousands of deaths every year:
 - The NHS Bowel Cancer Screening Programme invites 4.6 million and prevents approximately 2,500 deaths from bowel cancer every year.
 - The NHS Breast Cancer Screening Programme invites 1.9 million. detects 20,000 breast cancers and prevents approximately 1,300 deaths from breast cancer every year.
 - The NHS Cervical Cancer Screening Programme invites 4.6 million and prevents approximately 4,500 deaths from cervical cancer every year.
20. We have committed in the NHS Long Term Plan to further extend screening in England. One of the measures in the plan that has already been delivered ahead of target is the introduction of the use of Human Papillomavirus (HPV) as a primary screen for cervical cancer, completed in 2019. Testing for HPV more accurately predicts the presence of abnormal cells that may become cancerous, therefore making the cervical screening offer more effective.
21. The Long Term Plan objective to modernise the Bowel Cancer Screening Programme is also progressing with home faecal immunological testing kits (FIT) being introduced in 2019, and the extension of screening to those aged 50 years and older is underway.
22. UK National Screening Committee (UK NSC) provides independent expert scientific advice to ministers and the NHS on all matters related to screening. For example, to

increase take up, the UK NSC is currently exploring the potential of self-sampling within the cervical screening programme so that those that may not normally attend can participate in screening from their own homes. The UK NSC is also looking at the use of genomics and risk scores to more accurately predict who is the most at risk of cancer so that they can be more effectively targeted for screening.

23. Rapid Diagnostic Centres pathways bring together the latest diagnostic equipment and expertise, focusing on diagnosing cancers where patients often present with non-specific symptoms and may go to see their GP many times before being sent for appropriate tests. As at summer 2021, there were 102 live Rapid Diagnostic Centres pathways across hospitals in England, with a further 98 pathways in development. This is up from 12 in March 2020.
24. Targeted Lung Health Checks projects are running in parts of the country with the highest rates of mortality from lung cancer. People aged 55-74 and who have ever smoked are offered a free lung health check closer to where they live for example at a local supermarket. They may then have a lung cancer screening scan if the check shows they need it. Pilot schemes in Manchester and Liverpool showed positive results: in Manchester, there was an almost five-fold reduction in stage 4 disease, with 80% of cancers diagnosed at an early stage. Once rolled out nationally, the programme is expected to diagnose around 7,700 additional cancers at an early stage each year. The expansion of Targeted Lung Health Checks is continuing at pace but the Government recognises there is much to be done to reach a full national rollout – including sufficient diagnostic capacity and workforce is in place. In addition, referrals have remained lower than usual in part due to the overlap between lung cancer symptoms and COVID symptoms.
25. It is crucial that we continue to encourage people to see their GP if they have any worrying symptoms that could be cancer. This message is a core part of the joint NHSE and PHE “Help Us, Help You Accessing NHS Services” campaign, which seeks to address the barriers that are deterring patients from accessing the NHS. There were three cancer elements of the campaign: general symptoms (launched in October 2020), abdominal symptoms (including potential gynaecological cancers, launched in November), and lung cancer (launched in early 2021). The campaign messages are shown across a range of communication channels including TV advertising, social media and regional press. There has been an increase in referral numbers after each phase of the campaign. Starting from 16 August 2021, an abdominal/urological cancer (e.g. kidney, bladder) campaign and the lung campaign are running concurrently. The Help Us Help You campaigns have communications targeted to reach the appropriate audiences, such as Black, Asian and Minority Ethnic (BAME) groups.
26. Despite concerns, patients have been able to continue to receive care in general practice. The way GP services are delivered changed during the pandemic, such as triaging of patients and offering more remote consultations – but general practice is open and busy, and patients should continue to access services for diagnosis and treatment. The Government and NHSEI continue to support general practice to maintain and improve access to care for patients, learning lessons to ensure the NHS provides safe high quality care.
27. Community Diagnostic Hubs (CDH) have been established that improve the speed and capacity of diagnostic services. The roll out of CDHs will ensure diagnostic services achieve better patient outcomes, deliver an improved patient experience, provide additional capacity to enable the service to meet growing demand, and provide opportunities to improve productivity.

28. Sustained investment in diagnostic equipment is essential to the early diagnosis ambition. In September 2019 the Government announced funding of £200m for new equipment to drive earlier diagnosis of cancer and improve survival, replacing outdated MRI machines, CT scans and breast screening equipment with cutting edge technology. The new machines are “AI-enabled” to keep pace with future advances in technology, which allow tasks now done by humans to be done by computer.
29. 292 diagnostic assets have been ordered across 94 Trusts. So far, 237 (81%) of the 292 assets have been installed and/or delivered to the Trust. The remaining 55 are at various stages between order and installation.
30. NICE updated referral guidelines for suspected cancer published in June 2015 could save about 5,000 lives a year with GPs urged to think of cancer sooner and lower the referral threshold for tests³.
31. Sustained investment in the cancer workforce is also essential to reaching the earlier diagnosis ambition. The cancer workforce plan is outlined in paragraphs 76-83.
32. Another challenge being tackled is the variation in the stage at which cancers are diagnosed between geographic locations, ethnicities, genders and across socio-demographic factors. For example, research shows that 25% of Black African women and 22% of Black Caribbean women were diagnosed with late-stage breast cancer, compared with only 13% of White British women⁴.

Innovation

33. Successful innovation is critical role to achieving our Long Term Plan ambition for early diagnosis.
34. The Long Term Plan commits NHSEI to speeding up the path from innovation to business-as-usual, spreading proven new techniques and technologies and reducing variation. New investment is intended to ensure the next generation of treatments are implemented rapidly across the NHS.
35. In March 2021, in partnership with the SBRI Healthcare Programme, NHSEI launched an open call for innovation in cancer care, with a budget of £15m. The competition will bring new and existing cancer care innovations to the NHS frontline to support early detection and diagnosis and the diagnostic efficiency of cancer services.
36. Part of the ambition on early diagnosis will be achieved by new technologies, several of which are already being trialled in the NHS and others which are currently under consideration. Examples of new technologies already being trialled include cytosponge, which will save lives and diagnose early pre-cancerous conditions of the stomach and oesophagus, and colon capsule endoscopy cameras to diagnose bowel cancer. There is also the potential for the Faecal Immunochemical Test (FIT), currently used as the home testing kit in the NHS Bowel Cancer Screening Programme, to be used for symptomatic patients in primary care or patients on surveillance for previous cancers or pre-cancerous polyps. NHS England is also supporting Grail’s Galleri trial, where studies have shown the ability to detect multiple types of cancers through a single blood test. The main trial has now started.

³ <https://www.nice.org.uk/guidance/ng12>

⁴ Møller H., Henson K., Lüchtenborg M. Short-term breast cancer survival in relation to ethnicity, stage, grade and receptor status: national cohort study in England. *Br J Cancer*. 2016;115:1408–1415.

Treatment

37. Access to the optimal treatment for cancers is another critical aspect in improving cancer outcomes. The NHSEI cancer programme is focused on radiotherapy, genomics and molecular diagnostics, reducing unwarranted variation in treatment, and children & young person's services. In addition, the Cancer Drugs Fund is improving outcomes.

Radiotherapy

38. Eleven Radiotherapy Networks were established across the country in 2019/20 following consultation to spearhead implementation of the revised Radiotherapy Service Specification. Networks are driving improvements through greater workforce resilience and increased access to specialist skills and knowledge, ensuring all patients can access the very best treatment regardless of where they live.
39. NHSEI invested £130m to fund the modernisation of radiotherapy across England. This has ensured that older linear accelerators (LINACs - radiotherapy machines) being used by hospitals have been upgraded or replaced, giving cancer patients access to the latest leading-edge technology regardless of where they live. Over 80 machines have been replaced or upgraded.
40. Recent advances in radiotherapy using cutting-edge imaging and computing technology have helped target radiation doses at cancer cells more precisely. As a result, they enable better outcomes, with improved quality of life for patients and reduced NHS costs in the long term, through patients experiencing fewer side effects.
41. In addition, NHSEI is supporting providers to accelerate the delivery of stereotactic ablative body radiotherapy (SABR) for non-small cell lung cancer and oligometastatic indications, starting with the treatment of non-small cell lung cancer as this is, in some cases, an alternative to surgical resection. Specialised commissioners have recurrently allocated £12m to support providers to deliver SABR.
42. Proton beam therapy is a type of radiotherapy which treats specific types of cancer by precisely targeting tumours close to a critical part of the body such as the brain or spinal cord, reducing the damage to surrounding healthy tissues and vital organs. Following a £250m investment into proton beam therapy facilities at The Christie Hospital in Manchester and UCLH in London, 486 patients had started proton beam therapy at The Christie by March 2021 and UCLH will start to treat patients in late summer 2021.

Cancer Drugs Fund

43. The Cancer Drugs Fund, initially set up in October 2010, is worth £340million per year. It has provided access to promising new medicines for over 64,000 cancer patients and is now routinely delivering faster access to cancer drugs – up to 8 months faster in some cases.
44. This fund allows NICE to recommend the most promising new cancer drugs for use where there is too much uncertainty to recommend routine funding.
45. Further evidence is then collected on the drug for a defined period of time that is then considered by NICE in determining whether the drug can be recommended for routine NHS funding. Where NICE recommends a cancer drug in draft guidance, it is eligible for funding through the Cancer Drugs Fund from the point of NICE's draft recommendation.
46. For example, in September 2018, NHSE/I announced that NHS patients will benefit from Europe's first full access deal on breakthrough CAR-T therapy (a chimeric antigen receptor T-cell). NHS England's commercial deal with the manufacturer Novartis means

young people with a form of leukaemia will receive CAR-T on the NHS as part of the Cancer Drugs Fund. The Tisagenlecleucel form of CAR-T, also known as Kymriah, is part of wave of treatments in a new era of personalised medicine.

47. 76 leukaemia and 599 lymphoma patients have been approved for CAR-T treatments far. In February 2021, the first patients were approved for treatment with Tecartus, which is a new CAR-T therapy for the treatment of relapsed or refractory mantle cell lymphoma. More patients will benefit from CAR-T therapy in the coming years via the Cancer Drugs Fund. Twelve centres are now commissioned to provide CAR-T therapy.

Genomics and molecular diagnostics

48. The systematic application of genomic technologies has the potential to transform patients' lives by: increasing the number of people surviving cancer each year because of more accurate, earlier diagnosis, and more effective use of therapies; enabling a quicker diagnosis for patients; and matching people to the most effective medications and interventions, reducing the likelihood of an adverse drug reaction.
49. In October 2018, NHSEI launched the NHS Genomic Medicine Service to embed genomics in the NHS and to provide consistent and equitable care.
50. Through the NHS genomic medicine service, the cancer genomic testing strategy has undergone significant transformation in recent years, including: consolidating cancer genomic testing through the 7 NHS Genomic Laboratory Hubs to improve equity of access and standardising testing; investing in world leading technology by developing, validating and implementing large cancer gene panels to increase the range of testing and reduce turnaround times and procuring a cutting-edge Illumina Novaseq machine in each NHS genomic lab hubs to deliver large scale panel testing; implementing live clinical testing of whole genome sequencing including for cancer patients.
51. The genomic medicine service is planning for a range of exciting future developments including: expanding access to novel therapies and tumour agnostic drugs; exploring the use of pharmacogenomics and personalised medicine opportunities; planning a pilot around use of circulating tumour DNA (ctDNA); exploring the potential use of polygenic risk scores to assess the genetic risk of certain cancers including breast and colorectal cancer; and supporting research opportunities.
52. The NHS Long Term Plan and UK genomics strategy, Genome UK, outline a number of commitments for genomics including for the NHS genomic medicine service to sequence 500,000 whole genomes by 2023/24, including all children with cancer to be offered whole genetic sequencing and to extend the use of molecular diagnostics routinely for all people with cancer.
53. Genomics England and NHSEI have also been provided with funding for an additional £10 million through the Spending Review 2020 (SR20) to explore innovation in cancer including workstreams exploring long-read sequencing, multi-modal datasets, user research to understand cancer offerings and short-read sequencing.

Reducing unwarranted variation in treatment

54. Healthcare Quality Improvement Partnership commissions, develops and manages the National Clinical Audit and Patient Outcomes Programme, on behalf of NHS England, Wales and other devolved administrations.
55. This includes five national clinical audits focused on priority cancers: prostate, lung, breast (in older patients), oesophago-gastric and bowel cancers. These audits have been introduced to reduce variation in treatment by demonstrating where care is being

provided in line with standards and where a service is doing well or could be improved. Five additional new clinical audits were announced in May 2021, and will cover ovarian, pancreatic, kidney, non-Hodgkin lymphoma and metastatic breast cancer.

Quality of Life and Patient Experience of Care

56. Patients' experiences while being treated are associated with better outcomes. The quality of life for patients living with cancer and beyond is a key outcome within the national cancer programme.

Patient Experience

57. The National Cancer Patient Experience Survey (CPES) places patient experience on a par with clinical effectiveness and safety as a key strategic priority. It has been designed to monitor national progress on cancer care, to drive local quality improvements, to assist commissioners and providers of cancer care and to inform the work of the various charities and stakeholder groups supporting cancer patients.

58. In the 2019 CPES, cancer patients in England rated their overall care 9 out of 10 (8.81), the highest since the survey began in 2010.

59. The Long Term Plan sets out how all patients, including those with secondary cancers, will have access to the right expertise and support, including a Clinical Nurse Specialist or other support worker. The most recent data, drawn from the 2019 CPES, found that 92% of respondents said that they were given the name of a Clinical Nurse Specialist who would support them through their treatment.

60. The People Plan, published in July 2020, committed to offering training grants to 250 nurses to train as Clinical Nurse Specialists. Working through regions and in collaboration with Cancer Alliances, Health Education England (HEE) has offered training grants which has enabled over 900 training opportunities. Aimed at both existing and aspiring Clinical Nurse Specialists, this has enabled more nurses to undertake training, such as masters level / advanced training and education to develop specialist clinical, leadership, education and/or research capabilities.

61. The first Cancer Patient Experience Survey for under 16s has been developed with patients, parents and charities. The first survey was sent out in April 2021 and the first results will be published later in 2021.

62. The annual CPES shows that experience of care is generally very positive. However, while people who describe themselves as Asian, Black, Mixed, Other White and Other rate the quality of their experience as high, this is lower than white patients. These groups report being less likely to have been involved in decisions about their care and less likely to have received an explanation of treatment that they understand.

63. It is important we address this to ensure everyone has the same quality of patient experience. NHSEI are exploring reasons for that through patient collaborative work with trusts. They have also published three short videos on its YouTube channel to help providers and commissioners understand how perceived bias, poor communication and dignity issues can leave black and minority ethnic cancer patients with poorer patient experience than white British people.

Personalised Care

64. Personalised Care and Support Planning based on Holistic Needs Assessments continues to be rolled out across all cancer types. Data collection was paused in 2020/21 to reduce burden on trusts as a result of the pandemic, but we estimate that, by December 2020,

approximately 80% of all cancer Multi-disciplinary teams (approximately 1,100 teams) had implemented Personalised Care and Support Planning based on Holistic Needs Assessment. Holistic Needs Assessment ensures people's physical, practical, emotional, and social needs are met and that resources are targeted to those who need them most.

65. Personalised stratified follow-up pathways are being implemented across all Cancer Alliances for breast, colorectal and prostate cancers. An estimated 160,000 outpatient appointments have been released so far. Personalised Care and Support Planning roll out is underpinned by three publications in the last year: the Personalised Care and Support Planning Handbook, the Personalised Care and Support Planning Qualitative Evaluation Study, and the Digital Remote Monitoring System Implementation Guide.
66. Personalised Care and Support Planning and Holistic Needs Assessment data collection and reporting by Public Health England in the Cancer Outcomes and Services Dataset (COSD v9) is now underway following a pause due to the pandemic. The first data will be published in Q4 2021/22 and will allow a clearer view of roll out and will support improvement in adoption and delivery.
67. Cancer Alliances are now extending the stratified follow up principles to other cancer types and a commissioned evaluation study shows how we can expand Personalised Care and Support Planning into other cancer types (at least five more by 2023/24), while ensuring that it does not adversely affect health inequalities.
68. The Cancer Quality of Life Survey was launched in September 2020. All patients diagnosed with breast, prostate or colorectal cancer in England are being invited to complete the survey around 18-months after their diagnosis. In 2021, all patients with cancer will be invited to complete the survey. Over 20,000 responses have already been received. The first data report will be published in the second half of 2021.

D. Operational performance and delivery improvements

69. Improvements in operational performance and national leadership in delivery support will also help drive better cancer outcomes. Cancer waiting times were introduced in the late 2000s and they improved public perception for the better and highlighted areas in which cancer services can improve. Workforce ambitions are integral to the NHS Long Term Plan and its early diagnosis target. Cancer Alliances have created effective local system delivery for cancer with their expertise and integrated ways of working.

Access and waiting times

70. Cancer waiting time standards were introduced in the late 2000s, with data collection beginning in 2009. For a graph of the data collected please see Annex B. Delivering timely cancer pathways is important for survivability especially if a patient presents late to their GP with their symptoms, and where the diagnosis is cancer, a speedy diagnostic pathway is critical for 62 day compliance faster treatment.

71. There have historically been nine cancer standards:

- Two Week Wait from GP Urgent Referral to First Consultant Appointment
- One Month Wait (31-day) from a Decision to Treat to a First Treatment for Cancer
- Two Month Wait (62-day) from GP Urgent Referral to a First Treatment for Cancer
- Two Week Wait Breast Symptomatic (where cancer not initially suspected) from GP Urgent Referral to First Consultant Appointment
- One Month Wait (31-day) from a Decision to Treat to a Subsequent Treatment for Cancer (Anti-Cancer Drug Regimen)
- One Month Wait (31-day) from a Decision to Treat to a Subsequent Treatment for Cancer (Radiotherapy)
- One Month Wait (31-day) from a Decision to Treat to a Subsequent Treatment for Cancer (Surgery)
- Two Month Wait (62-day) from a National Screening Service to a First Treatment for Cancer
- Two Month Wait (62-day) following a Consultant Upgrade to a First Treatment for Cancer

72. The greatest focus has been placed on the first three of these because they show the key time frames in which patients should be seen or treated as part of their cancer pathway.

73. Before the Covid-19 pandemic, there was a general trend of decreasing performance against these standards, with a reduction in performance for the 2 Week Wait for GP Urgent Referral to First Consultant Appointment standard from 94.9% in 2009/10 to 90.8% in 2019/20. The other standards have seen similar levels in reduction.

74. This decreasing performance is a result of increasing demand for services. Reasons for increased demand include increasing prevalence of cancer, changes to NICE guidelines

for referrals and increasingly complex (but more effective) treatment pathways. For example, there were over **0.9 million** 2 Week Waits for GP Urgent Referral to First Consultant Appointment in 2009/10 which increased to over **2.8 million** in 2019/20.

75. We are committed to the introduction of a new 28-day Faster Diagnosis Standard. Full monitoring of the Faster Diagnosis Standard will begin in October 2021. This standard has been designed to improve earlier diagnosis of cancer, to meet our cancer survival ambition. The standard will help to ensure that people with cancer are diagnosed more quickly and effectively, helping to reduce uncertainty for patients about their diagnosis, in line with our goals set out in the NHS Long Term Plan.

Workforce

76. The NHS Long Term Plan reinforced the need for continued delivery of the Cancer Workforce Plan Phase 1, developed by Healthy Education England (HEE) alongside partners and published in December 2017.

77. The Cancer Workforce Plan committed to the expansion of capacity and skills by 2021 including:

- Grow the workforce by an additional 1500 FTE
- 200 additional clinical endoscopists (in addition to the 200 by 2018)
- 300 reporting radiographers
- An ambition to increase improved working practices, attracting qualified people back to the NHS through domestic and international recruitment
- More clinical radiologists, histopathologists, oncologists and radiographers
- The expansion of Cancer Nurse Specialists and develop common and consistent competencies for this role with a clear route into training.

78. HEE published a Cancer Workforce Plan phase 1 progress update in 2019. Updated figures will be published by NHS Digital in due course.

79. In 2021/22, HEE is continuing to take forward the cancer priorities identified in the NHS Long Term plan and People Plan. HEE is prioritising the training of 400 clinical endoscopists and 450 reporting radiographers. Training grants are being offered for 250 nurses to become cancer nurse specialists and 100 chemotherapy nurses, training 58 biomedical scientists, developing an advanced clinical practice qualification in oncology, and extending cancer support-worker training.

80. According to HEE data, between 2016/17 and 2019/20, the cancer workforce grew by 3,342 FTE compared to the ambition for that period of 2,943 FTE, exceeding our ambitions by 399 FTE. Provisional indications suggest that if we continue the trend of increasing supply which took place in Q1&2 20/21 we are likely to exceed our 2020/21 workforce ambition.

81. SR20 included an additional £260 million for HEE in 2021-22 to support the training and retention of the NHS workforce, including £52m further investment in the cancer and diagnostics workforce including:

- supporting cancer Long Term Plan ambitions – including further progressing cancer nursing initiatives and upskilling within endoscopy, imaging and healthcare science to support earlier cancer diagnosis

- supporting workforce growth and transformation within the diagnostic pillars: imaging, endoscopy, pathology, physiological measurement and support diagnostics recovery and renewal
- expanding medical specialties – with an additional 245 medical places in 2021/22 across the priority professions and located in geographies with greatest need.

82. Further investment in the cancer workforce and NHS workforce as a whole will be dependent on SR21.

83. The NHS Retention Programme is continuously seeking to understand why staff leave, resulting in targeted interventions to support staff to stay in the NHS. Retention of the current workforce is above expected levels, but it is anticipated this is temporary and due to the impact of Covid-19. We are not complacent about the success of this year's retention programme and are exploring options to support nurses and other staff to stay on. NHSE/I are leading a comprehensive retention programme which includes a new recruitment, retention and support package, a programme looking specifically at those nurses over 50 years old and newly qualified nurses entering the workforce.

Cancer Alliances

84. Cancer Alliances provide for effective local system delivery for cancer. They were established in 2016 to establish leadership and cancer expertise to drive improvement. They facilitate integrated working and collaboration across their local systems, leading delivery across a wide range of functions:

- Transforming services: co-ordinating local improvements to cancer pathways across primary and secondary care, and leading work to reduce variation in outcomes for patients between different providers
- Improving patient experience: focusing on personalisation of care for cancer patients, supporting providers to implement new follow up pathways
- Establishing new programmes such as leading the local delivery of Targeted Lung Health Checks
- Operational delivery: fostering a collective responsibility among providers for operational performance across local systems, and co-ordinating new approaches to integrated working like the cancer surgical hub arrangements which helped to maintain services during the pandemic
- Running clinical networks for cancer which lead on agreeing clinical standards and practices for their geography, facilitate research and the introduction of new techniques, and support the streamlined and evidence-based transformation of patient pathways.

85. One of the key proposals in the new Health and Care Bill is establishing statutory Integrated Care Systems. These will be accountable for meeting the health needs of their local populations, including those with cancer or suspected cancer, and for performance against the cancer waiting times standards.

86. Cancer Alliances will help Integrated Care Systems do that and will be accountable to them for the delivery of their functions. Cancer Alliances will continue to bring together partners from across their geography to support their Integrated Care System to lead planning and delivery of cancer services in support of their Integrated Care Systems.

E. Research

87. Research is crucial in the fight against cancer. That is why the Department of Health and Social Care invests £1bn per year in health research through the National Institute for Health Research (NIHR).
88. NIHR cancer research expenditure has risen from £101 million in 2010/11 to £138 million in 2019/20. This constitutes the largest investment in a disease area.
89. The mission of the NIHR is to improve the health and wealth of the nation through research.
90. The NIHR welcomes funding applications for research into any aspect of human health, including cancer research. As with other Government funders of health research, the NIHR does not allocate funding for specific disease areas. The level of research spend in a particular area, is driven by factors including scientific potential and the number and scale of successful funding applications.
91. The Department works closely with research funding partners such as Cancer Research UK, the Medical Research Council, and cancer charities, who fund research into new scientific discoveries.

International research collaboration

92. As part of the UK-EU Trade and Cooperation Agreement (TCA) published on 24 December, the UK has agreed to associate to Horizon Europe which represents a valuable collaboration on science and research to tackle global challenges, and in fields that will benefit the British people.
93. The government is committed to establishing the UK as a science and research global superpower, and this deal fulfils our manifesto commitment to collaborate internationally in this regard.
94. The Government is making available an additional £250 million in 2021/22 for the costs of association to Horizon Europe. In addition, £400 million of the funding announced at SR20 to support government priorities has been made available to help pay for our association to Horizon Europe. As a result, UK scientists will have access to more public funding than ever before.
95. Participation in Horizon Europe furthers the UK ambition to become a global science superpower: by joining the world's largest collaborative research programme – worth around €95 billion over the next decade – we will be continuing important collaboration on scientific research with EU partners.
96. The Government wants to make the most of association to Horizon Europe and are encouraging UK researchers and companies from all parts of the UK to take advantage of this opportunity.
97. Moreover, the extra funding announced takes total Government investment in R&D to £14.9 billion in 2021/22 and follows four years of significant growth in R&D funding, including a boost of more than £1.5 billion in 2020/21. It will mean UK Government R&D spending is now at its highest level in four decades.
98. International collaborations between research charities are also important. For example, Cancer Research UK say that their research partnerships enable mutually beneficial research collaborations with like-minded organisations from around the world, accelerating progress in the fight against cancer.

99. The Medical Research Council, working with Cancer Research UK, is the UK lead for delivering the UK-USA cancer scientific summit in November 2021. The summit will bring together world leading experts from both countries to identify opportunities for research collaboration, with a vision of fundamentally changing our understanding of, and approach to cancer. Recommendations from the summit will be discussed between the Prime Minister and President of the United States of America in Spring 2022. Leading representatives from global pharmaceutical, biotech and med-tech companies will also be engaged to agree how we will jointly address the challenges identified at the summit.

F. Impact of the covid-19 pandemic and recovery

100. Cancer diagnosis and treatment has remained a top priority throughout the pandemic. Due to the huge efforts of the NHS, 2.91 million urgent referrals were made and over 715,000 people received cancer treatment between March 2020 and June 2021. From March 2020 to July 2021, cancer treatments were 93% of previous levels, and of those who needed treatment for cancer, 95% did so within 31 days. Radiotherapy, for example, continued through the pandemic at 92.1% of usual levels⁵ - and in July 2021 was at 107.4% of usual levels, with 9,769 courses started, compared with July 2019.
101. However, fewer people came forward to their GPs with possible cancer symptoms. NHSEI estimate that up to 36,000 fewer people than expected have started cancer treatment. This 'treatment gap' is concentrated in high volume cancers including breast and urology. Much of these are people we would have expected to have present through an urgent GP referral or through the breast screening programme.
102. The number of people waiting over 62 days for a decision to treat has dropped considerably since its peak in May 2020 but remains materially above the pre-pandemic level.
103. Despite the pandemic, continued progress has been made in delivering the Long Term Plan commitments. This includes increased investment in public awareness campaigns; starting to extend the bowel cancer screening programme to over 50s; rolling out targeted lung health checks initially in 23 areas of the country and, introducing rapid diagnostic centre pathways to speed up diagnosis.
104. NHS England's Cancer Recovery Plan sets out the aims and actions needed to recover from the pandemic. Cancer patients continue to be prioritised within the additional £1 billion that has been made available to NHS systems in 2021/22 to tackle the elective backlog. It is too soon to know the full impact of the pandemic on early diagnosis levels and cancer outcomes but it remains a very significant challenge.

Screening

105. The COVID-19 pandemic impacted the delivery of cancer screening services. Some aspects of the cancer screening pathways were locally paused due to providers facing a range of significant clinical and operational impacts. This included some local pauses to routine invitations and some diagnostic and follow up treatment services.
106. However, those people at highest risk continued to be seen as a matter of priority. NHSEI also instructed providers to maintain all NHS screening services, unless unsafe to do so.
107. NHS England and Improvement (NHSEI) continue to work to minimise the impact the pandemic. Providers have been expected to maintain screening services as a matter of priority and work above pre-pandemic capacity levels to ensure that invitation and uptake rates remain high. The planning and delivery of screening and symptomatic pathways has also been integrated to ensure the optimal deployment of workforce and estate facilities for cancer detection.

⁵ Cumulative from March 2020 to July 2021: 156,456 courses of treatment were started representing 92.1% of usual levels (comparing each month with same month from March 2019 to February 2021)

108. The work to recover of cancer screening services from the disruption caused by the pandemic has presented opportunities for lasting innovation and improvement. For example, the use of virtual Specialist Screening Practitioner (SSP) appointments for bowel screening which were introduced as an alternative to the face-to-face meetings.

Access and waiting times

109. In April 2020, the first full month affected by the national lockdown, there was a decline in the number of people seeking cancer referrals. This is reflected in Two Week Wait from GP Urgent Referral to First Consultant Appointment which shows that 80,031 referrals were made, compared to 199,217 made in April 2019. This reduction can be explained by people's hesitancy to attend medical services during the first national lockdown. This reduction can also be seen at the start of the winter 2021 lockdown. In total, for 2020/21 there were 300,000 fewer than expected Two Week Wait from GP Urgent Referral to First Consultant Appointment, this impact can be seen fully in the 2 Week Wait Performance and Activity Oct 2009 – Feb 2021 with pandemic onset and expected standard.

110. We have encouraged people to go to their doctor if they have cancer symptoms through media, such as the 'Help us, Help you' campaign. The number of people coming forward for cancer care is improving, with May, June and July 2021 being the some of the highest ever months for urgent cancer referrals, with 207,188 referrals in May, 230,110 in June and 224,086 in July.

111. Surgical hubs for cancer patients have also been made available throughout the country. These hubs are covid-19 secure and can deliver cancer treatment without the risk of infection. This means prioritising those who need care most.

September 2021

Annex A: NHS Cancer Plans by Year

Table 1

Plan title	Year	Aim
<i>A policy framework for commissioning cancer services: A report by the Expert Advisory Group on Cancer to the Chief Medical Officers of England and Wales</i>	1995	Focussed on creating cancer networks and achieving uniformly high standards
<i>The NHS Cancer Plan: a plan for investment, a plan for reform</i>	2000	Focussed on investment and reform to reduce death rates through prevention, early detection, and high quality treatment
<i>Cancer Reform Strategy</i>	2007	Focussed on spreading best practice, building on previous strategies, and bringing a new focus on early diagnosis, living with and beyond cancer and tackling inequalities
<i>Improving Outcomes: A Strategy for Cancer</i>	2011	Focussed on “improvements in outcomes that matter”, placing an emphasis on awareness campaigns and screening
<i>Achieving World-Class Cancer Outcomes: A Strategy for England 2015-2020</i>	2015	Produced by the independent Cancer Taskforce, providing a consensus view from the cancer community on what needs to be done next across the cancer patient pathway

Annex B: Comparison of UK five-year survival rates with Australia, Canada, France, Germany, New Zealand and USA

1. This Annex compares five-year net-survival rates in the UK in 2000-04, 2005-09 and 2010-14 for six cancers, with those of Australia, Canada, France, Germany, New Zealand and the USA. These countries' rates are ranked among the 34 OECD countries covered by the CONCORD study.⁶
2. Some caution is needed in comparing international data due to different regional practices in data collation and variation in the coverage of data for different countries. Table A shows the proportion of the population covered by the statistics for each of the countries considered in the Annex, in particular showing that survival rates for France and Germany both cover less than half of their respective populations.

Table A: proportion of national population covered by cancer registries participating in CONCORD-3 for selected countries

Country	Coverage of national population
Australia	100.0%
Canada	76.5%
France	21.7%
Germany	36.8%
New Zealand	100.0%
UK	100.0%
USA	85.8%

3. Table B shows the UK's performance improving in reducing the gap with the top-performing countries. While our five-year net survival rate ranked 7/7 across several cancers, we were the most improved between 2000-04 and 2010-14 for 10 cancers, relative to Australia, Canada, France, Germany, New Zealand and USA.

Table B: five-year net survival in the UK for various cancers and patient groups across time, and ranking among countries

	Rank	Rank (of	Improvement between	Rank (of
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⁶ These countries are Australia, Austria, Belgium, Canada, Chile, Columbia, Costa Rica, Czech Republic, Denmark, Estonia, Finland, France, Germany, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, UK and USA.

		periods					
Oesophagus	Persons	11.5	6	15.7	5	4.2	2
Stomach	Persons	16.2	7	20.7	7	4.5	2
Colon	Persons	52.0	7	60.0	7	8.0	1
Rectum	Persons	54.6	7	62.5	5	7.9	1
Liver	Persons	7.1	7	13.0	6	5.9	2
Pancreas	Persons	3.7	7	6.8	7	3.1	3
Lung	Persons	8.3	7	13.3	7	5.0	1
Melanoma of the skin	Persons	86.4	7	90.9	4	4.5	1
Breast	Women	79.8	7	85.6	7	5.8	1
Cervix	Women	58.9	7	63.8	6	4.9	1
Ovary	Women	30.2	7	36.2	7	6.0	1
Prostate	Men	81.9	7	88.7	7	6.8	1
Brain	Adults	20.6	6	26.3	6	5.7	2
Myeloid	Adults	42.3	5	48.7	5	6.4	3
Lymphoid	Adults	54.3	7	64.9	7	10.6	1
Brain	Children	68.4	3	71.9	3	3.5	5
Acute lymphoblastic leukaemia	Children	85.9	6	92.2	2	6.3	1
Lymphoma	Children	86.8	7	91.7	7	4.9	3

4. The following paragraphs compare the UK for six cancers: breast, cervical, colon, rectal, lung and prostate. These cancers accounted for over 40% of the deaths due to malignant melanomas in England in 2020⁷ (although as stated previously, the data comparison is only as recent as 2010-2014).
5. Please note that the ranges on the y-axes are different on each graph to allow comparison between the countries rather than across cancers, and do not always start at zero.

Breast cancer

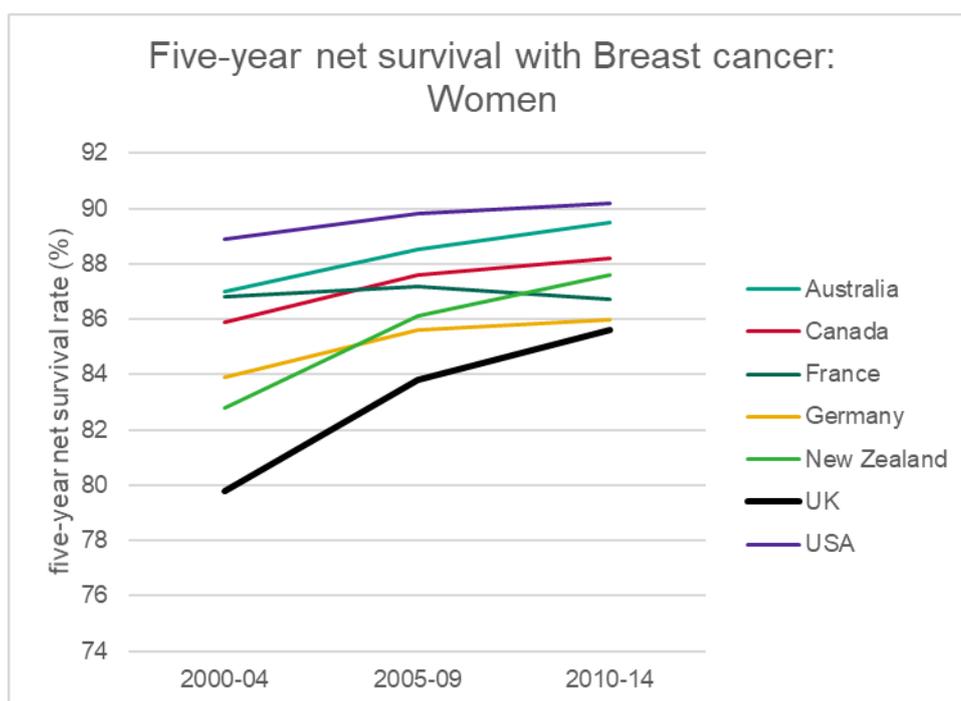
6. As shown in Table C, the UK had the 21st highest five-year survival rate for women with breast cancer in 2010-14, among the 34 OECD countries. This puts us behind Australia, Canada, France, Germany, New Zealand and the USA, though we do show the greatest improvement over the study period relative to these countries. Malvezzi et al projected that the UK will have a lower age-standardised mortality rate from breast cancer than the EU average, France and Germany⁸ though we must be cautious in placing too much emphasis on a single projection.

Table C. Five-year net survival rate for women with breast cancer, by country and over time

⁷ Source: Mortality statistics on ONS NOMIS database, available at <https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&data set=161>

⁸ *European cancer mortality predictions for the year 2019 with focus on breast cancer*, available at [https://www.annalsofoncology.org/article/S0923-7534\(19\)31156-1/fulltext](https://www.annalsofoncology.org/article/S0923-7534(19)31156-1/fulltext) This work is not statistically significant.

Country	2000-04		2005-09		2010-14	
	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)
Australia	87.0	3	88.5	3	89.5	2
Canada	85.9	7	87.6	7	88.2	7
France	86.8	5	87.2	8	86.7	12
Germany	83.9	16	85.6	17	86.0	19
New Zealand	82.8	19	86.1	12	87.6	10
UK	79.8	23	83.8	23	85.6	21
USA	88.9	1	89.8	1	90.2	1



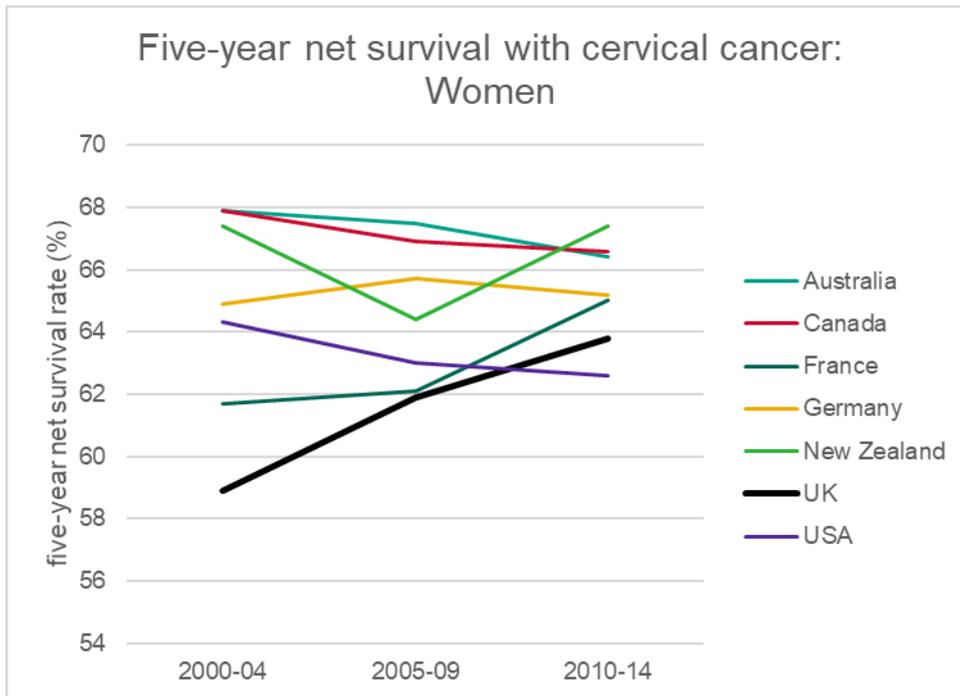
Cervical cancer

7. The UK had the 24th highest five-year survival rate for women with cervical cancer in 2010-14, relative to the 34 OECD countries. Due to our improvement in survival with cervical cancer over the study period (at almost five percentage points between 2000/04 to 2010/14), we have overtaken the USA. (See Table D)

Table D. Five-year net survival rate for women with cervical cancer, by country and over time

Country	2000-04		2005-09		2010-14	
	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)
Australia	67.9	5	67.5	9	66.4	16
Canada	67.9	5	66.9	11	66.6	13
France	61.7	25	62.1	25	65.0	21
Germany	64.9	17	65.7	16	65.2	20
New Zealand	67.4	9	64.4	22	67.4	10

UK	58.9	28	61.9	26	63.8	24
USA	64.3	19	63.0	23	62.6	26

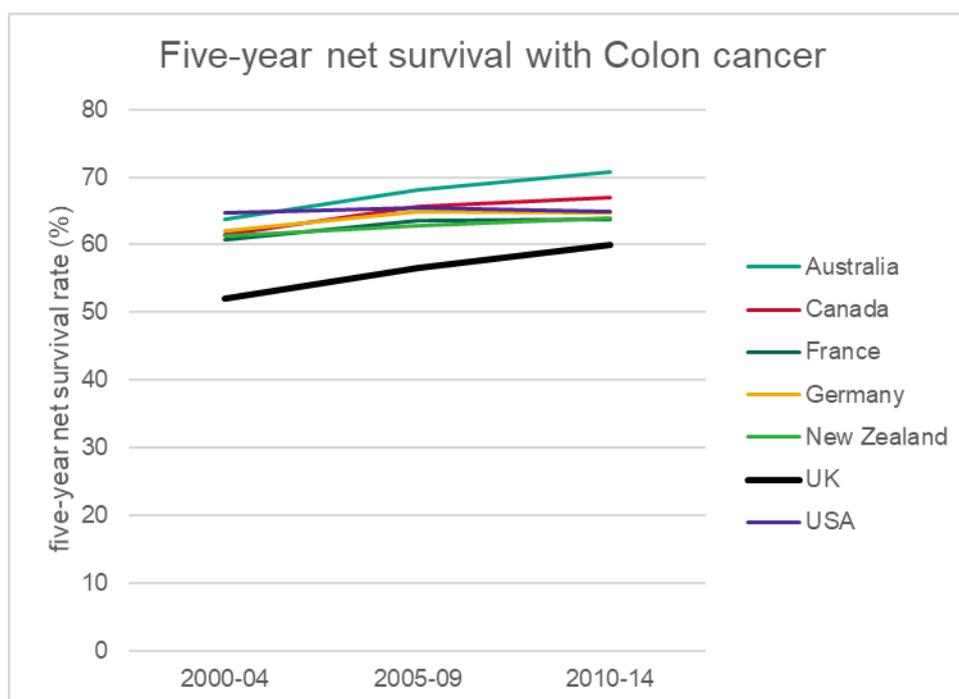


Colon cancer

8. The UK had the 25th highest five-year survival rate for patients with cancer of the colon in 2010-14, relative to the 34 OECD countries. We have the lowest survival rate throughout the study period of the 7 countries displayed, but again show the greatest improvement at 8 percentage points (see Table E)

Table E. Five-year net survival rate for patients with cancer of the colon, by country and over time

Country	2000-04		2005-09		2010-14	
	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)
Australia	63.7	5	68.1	2	70.7	3
Canada	61.6	9	65.7	5	67.0	8
France	60.7	13	63.6	14	63.7	16
Germany	62.0	8	64.9	9	64.8	13
New Zealand	61.4	10	62.8	17	64.0	15
UK	52.0	25	56.5	22	60.0	25
USA	64.7	2	65.5	6	64.9	10

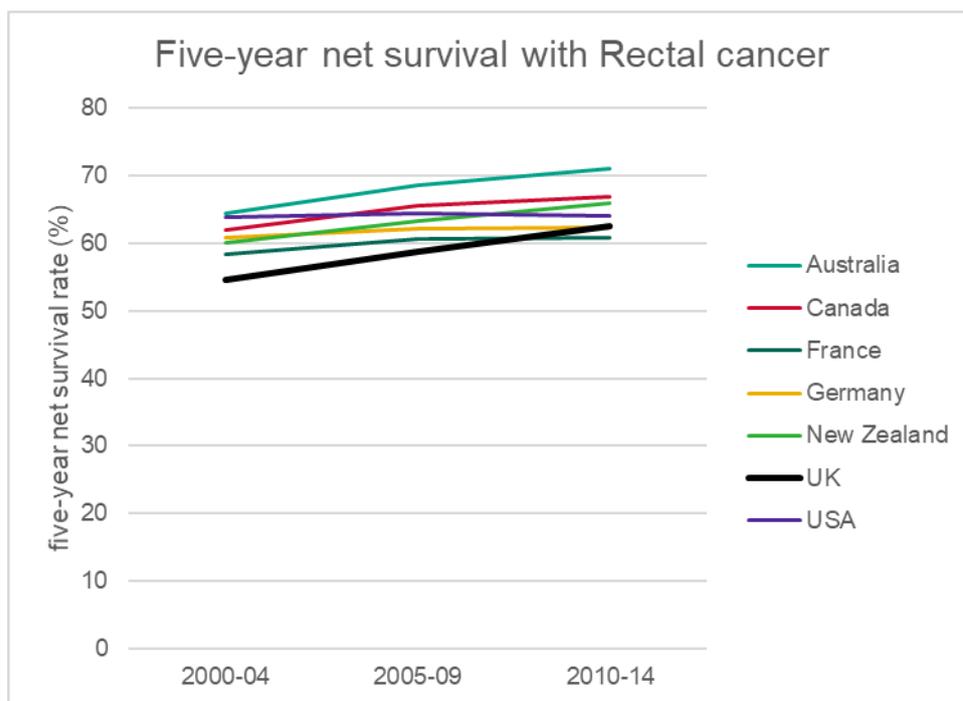


Rectal cancer

9. The UK had the 17th highest five-year survival rate for patients with rectal cancer in 2010-14 among the 34 OECD countries. Our improvement in survival over the study period is again highest among the countries displayed at almost 8 percentage points, moving the UK above France and Germany (see Table F).

Table F. Five-year net survival rate for patients with rectal cancer, by country and over time

Country	2000-04		2005-09		2010-14	
	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)
Australia	64.4	2	68.6	1	71.0	2
Canada	61.9	7	65.5	7	66.8	6
France	58.3	16	60.7	18	60.9	21
Germany	60.9	8	62.2	16	62.3	18
New Zealand	60.1	11	63.3	13	66.0	8
UK	54.6	20	58.7	21	62.5	17
USA	63.9	3	64.5	9	64.1	15

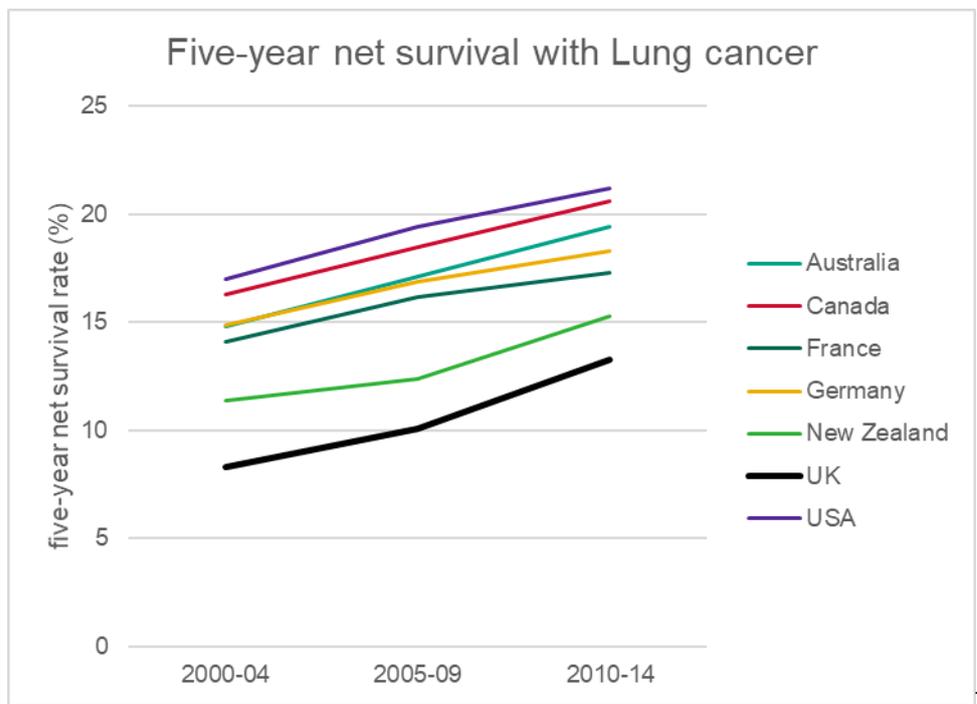


Lung cancer

10. The UK had the 28th highest five-year survival rate for patients with lung cancer in 2010-14 among the 34 OECD countries. We again have the highest improvement over the study period among the seven countries shown (5 percentage points), although for 2010-14 the actual survival rate continues to be 2 percentage points lower than any of the others (see table G).

Table G. Five-year net survival rate for patients with lung cancer, by country and over time

Country	2000-04		2005-09		2010-14	
	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)
Australia	14.8	11	17.1	10	19.4	12
Canada	16.3	6	18.5	7	20.6	5
France	14.1	13	16.2	14	17.3	17
Germany	14.9	10	16.9	12	18.3	14
New Zealand	11.4	22	12.4	26	15.3	23
UK	8.3	33	10.1	31	13.3	28
USA	17.0	5	19.4	6	21.2	4



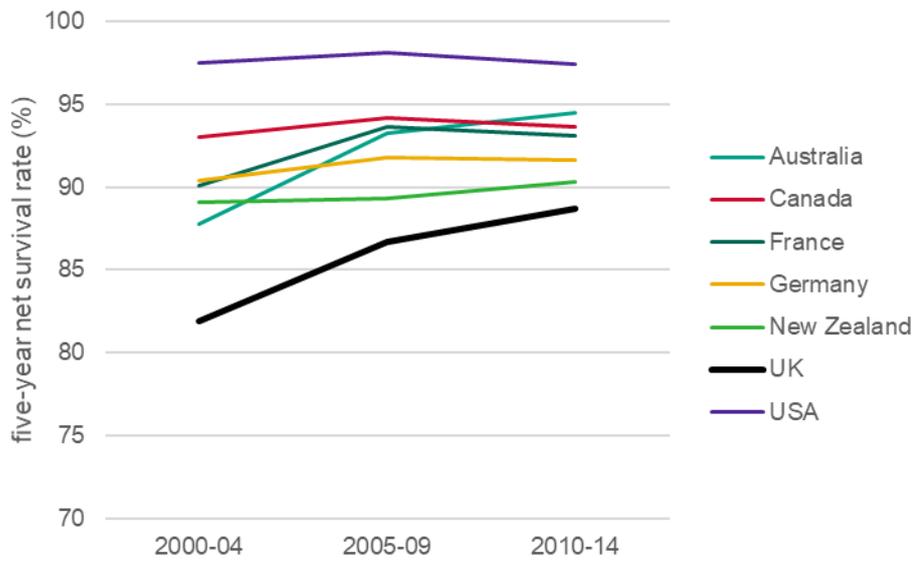
Prostate cancer

11. The UK had the 24th highest five-year survival rate for men with prostate cancer in 2010-14 among the 34 OECD countries. The UK and Australia had a markedly higher improvement in survival over the study period than any of the other selected countries (6.8 and 6.7 percentage points respectively). However, Table H shows the UK's net survival rate is still at least 1.5% lower than any of the other six selected countries.

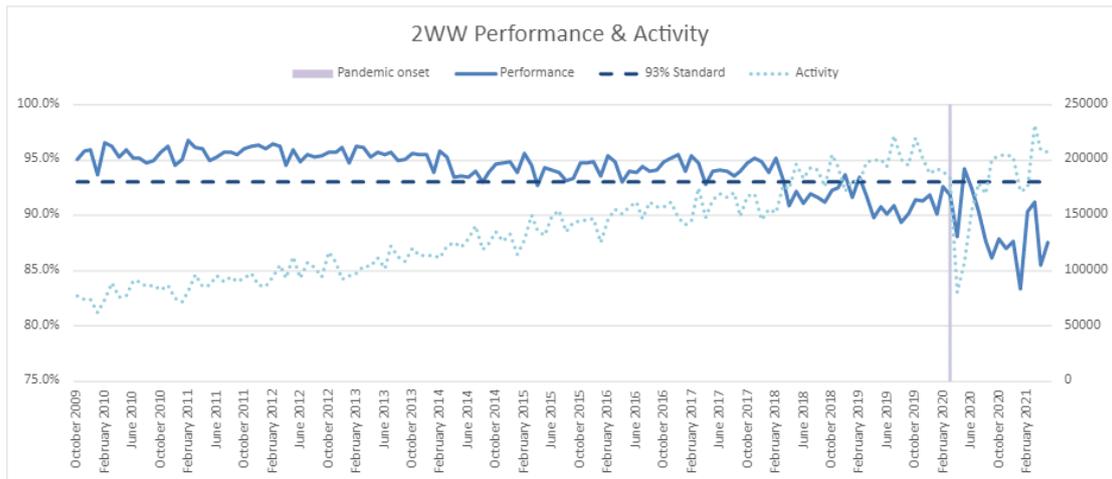
Table H. Five-year net survival rate for men with prostate cancer, by country and over time

Country	2000-04		2005-09		2010-14	
	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)	5-yr survival rate (%)	Rank (of 34)
Australia	87.8	11	93.2	7	94.5	3
Canada	93.0	3	94.2	3	93.6	6
France	90.1	7	93.6	5	93.1	9
Germany	90.4	6	91.8	10	91.6	12
New Zealand	89.1	10	89.3	20	90.3	18
UK	81.9	24	86.7	26	88.7	24
USA	97.5	1	98.1	1	97.4	1

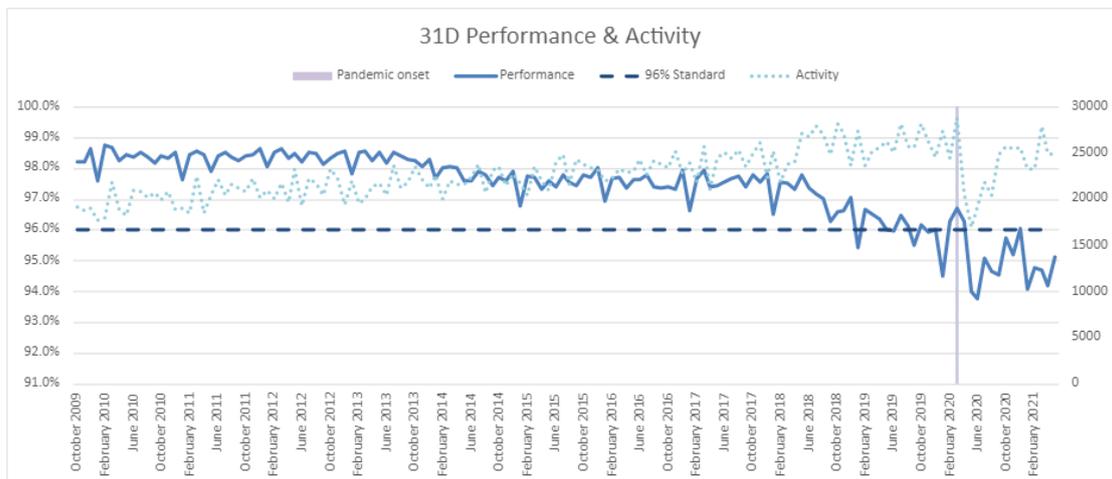
Five-year net survival with Prostate cancer: Men



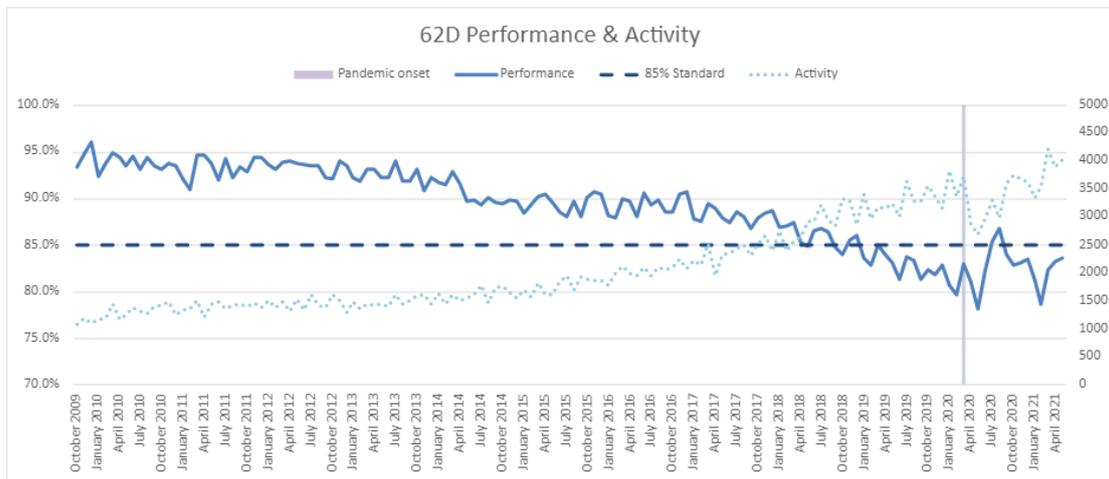
Annex C: Covid-19 wait time comparison



2 Week Wait Performance and Activity Oct 2009 – Feb 2021 with pandemic onset and expected standard



31 Day Performance and Activity Oct 2009 – Feb 2021 with pandemic onset and expected standard



62 Day Performance and Activity Oct 2009 – Feb 2021 with pandemic onset and expected standard

Sept 2021